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harmonic wave/CI value of fundamental wave).

[0013] In order to make the CI value ratio 1.0 or more in the manner described above, it is necessary to make the CI value of the harmonic wave greater. As a method therefor, it is known that the length (d1) of the excitation electrodes 12b and 13b formed in the grooves 12a and 13a is made to be half, i.e., $0.5L$, with respect to the length (L) of the vibration arm sections 12 and 13 in Fig. 11.

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[0014] Fig. 13 shows the relationship between the CI value of the fundamental wave, such as the above, and the CI value ratio. As shown in Fig. 13, the shorter the length (d1) of the excitation electrodes 12b and 13b becomes with respect to the length (L) of the vibration arm sections 12 and 13 the more the CI value of the fundamental wave is increased, and thereby the CI value ratio is also increased.

[0015] In contrast, the longer the length (d1) of the excitation electrodes 12b and 13b becomes with respect to the length (L) of the vibration arm sections 12 and 13 the more the CI value of the fundamental wave is decreased, and at the same time, also, the CI value ratio approaches 1.0. For example, when the length (d1) of the excitation electrodes 12b and 13b becomes 60% of the length (L) of the vibration arm sections 12 and 13, the CI value ratio becomes 1.0 or less.

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[0021] However, if the CI value of the harmonic wave is increased to such a degree that the CI value of the fundamental wave is not increased too much, it is not easy to make CI value ratio to be 1.0 or more. Therefore, a problem inevitably arises in that the CI value of the fundamental wave is increased more than necessary.

04 [0035] An object of the present invention is to provide a vibrating reed in which the ratio of CI values is maintained constant while minimizing the CI value of the fundamental wave such that variations of the CI values between the vibrating piece devices are reduced even if the base is made short, and the entire vibrating piece can be made smaller.

05 [0157] As shown in Fig. 19(a), grooved portions 120a and 130a are formed on the obverse surface 120e and the rear surface 120f of the tuning-fork arm 120 (grooved-portion forming step).

06 Please delete the Abstract Section of the specification and replace it with the following abstract in clean form. Applicant includes herewith an Attachment for Specification Amendments showing a marked up version of the previous version of the Abstract Section.

ABSTRACT OF THE DISCLOSURE

07 A vibrating piece in which a CI value ratio is maintained constant while
08 minimizing the CI value of the fundamental wave so that variations of the CI values
09 between the vibrating piece devices are reduced even if the base is made short, and the
10 entire vibrating piece can be made smaller.